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ABSTRACT

The nature, structure, and scope of student teaching in agricultural education as practiced, supervised, and evaluated in the United States today was examined through a survey of all 80 U.S. agricultural teacher education programs. Responses were obtained from 73 (91%) of the programs. The responding teacher education institutions exhibited great variability in terms of how student teaching is organized, how long it lasts, what is required of students teachers, how the experience is organized, and how it is assessed. A limited number of programs provided intensive, planned, outside experiences in related areas such as extension. All programs used some sort of planning documentation. Many programs used course syllabi as a structuring document. In a slightly larger number of programs, a cooperating teacher manual was provided. The vast majority of programs provided a student teaching manual. The criteria used to select cooperating teachers varied widely. Most of the criteria appeared to be rather arbitrary on the teacher education facility's part. Little formal training was being provided on the cooperating teacher's role or the procedure for supervising students. Overall, student teaching in agricultural education was based more on the apprenticeship model than on the clinical approach advocated by educational theorists such as Dewey. (Contains 18 references.) (MN)

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STUDENT TEACHING IN AGRICULTURAL EDUCATION

Student teaching, in one form or another, has been an integral part of teacher education for well over a century. Agricultural teacher educators throughout this country have consistently incorporated some form of field experience in their teacher preparation programs since the very beginnings of the profession. Almost without exception, student teachers describe their student teaching experiences as the most valuable part of their college education. Veteran teachers describe their student teaching experiences as the most important part of their preparation for teaching. Teacher educators look on student teaching as a critical part of their programs.

Introduction and Theoretical Framework

Importance of Student Teaching

Student teaching is typically the culminating experience in preservice teacher education. Student teaching is a time when students can experience for themselves what it is like to be a teacher. This is the point at which educational theories must be put into practice (Sears, Marshall, & Wilborn, 1994). Student teaching involves structured teaching experiences in the real world of the classroom. It allows for positive feedback and periodic constructive criticism from a university supervisor and on a daily basis from the cooperating teacher in whose classroom the student is practicing (Koehler, 1986).

Henry (1989) described what he referred to as the Flowers Report, published in the 1940s. Henry concluded that the Flowers report had greatly influenced student teaching programs by promoting the development in teacher education programs of:

1. A series of laboratory experiences extending over the period of college work and designed to help the student to participate in and study the major activities of today's teacher.
2. Laboratory experiences prior to student teaching, which are integrated with other parts of the college program.
3. Full-time student teaching in settings other than laboratory schools.
4. Supervision by both college and public school supervisors.
5. An internship, which would provide continuity between preservice and inservice education, gradual induction with part-time supervision by those who know the beginning teacher, and would afford the college a chance to conduct research on its work and use the results of that research to facilitate curriculum changes as needed.

Summaries of more recent research on preservice teacher education point to the importance of the student teaching experience. Student teaching is widely accepted as the essential and most often the culminating component in teacher education programs (Koziol, Minnick, & Sherman, 1996). Throughout the broad field of teacher education, student teachers as well as veteran teachers insist that the student teaching experience is the most useful part of preservice teacher preparation programs (Cruickshank & Armaline,

1986). Certainly student teaching is considered to be a central feature of agricultural teacher education (Marvin, 1967).

Student Teaching as Apprenticeship

Before the Industrial Revolution, people were trained for nearly all skilled occupations through the use of apprenticeship programs. Michael W. Coy (1989) described apprenticeship as a system in which implicit knowledge is gained through direct observation and experience. The use of apprenticeship programs was greatly reduced with the advent of numerous machine inventions during the Industrial Revolution. This eventually led to a decline in the availability of skilled laborers and the introduction of basic literacy training for workers (Smith & Souviney, 1997).

The primary method for preparing most public school teachers in the United States was on-the-job training up until the late 1800s. This practice continued for many rural school districts until the mid-1900s (Smith & Souviney, 1997). In the mid-1800s, the practice teaching movement became established as normal schools developed. At first, students were assigned in pairs for practice teaching during a period of two weeks or so. This program continued to grow through the normal school and into the teachers college era (Henry, 1989). Normal schools were developed at the turn of the century partly to promulgate professional teaching standards (Smith & Souviney, 1997).

History of Student Teaching in Agricultural Education

In Teacher training in agriculture: Status, development, and methods in the field of teacher training (Bulletin No. 20), the Federal Board for Vocational Education (1924) outlined examples of both the clinical and field-based approaches to teaching internships.

One early clinical model included practice teaching in "moot" classes. A moot class was described as a session in which the student presented a lesson with no students present, but with the teacher-trainer observing and critiquing. It also described a practice similar to our current "peer teaching" or "micro teaching" approach, in which preservice teachers taught lessons to their peers and university teacher educator. It also described preservice teachers being asked to teach college classes for observation and critique. University students under the supervision of teacher-trainers (Federal Board for Vocational Education, 1924) offered other clinical experiences in so-called university schools, in which actual secondary-level students enrolled for instruction.

Bulletin 20 (Federal Board for Vocational Education, 1924) then described three models more like our current concept of student teaching. The Ohio plan (the Ohio State University, Columbus) involved coordination of directed teaching in five local high schools with programs in vocational agriculture, which worked closely with the teacher training faculty in a cooperative arrangement. Students in this program participated in 12-week programs of observations alternating with directed teaching. The Virginia plan (Virginia Polytechnic Institute, Blacksburg) accommodated the isolated, rural nature of the setting by making use of a local high school within a few blocks of the university. To

facilitate coordination, the school principal was "officially connected" (p 33) with the Agricultural Education department at the university and the "man in charge of the vocational agricultural instruction in the high school [was] a member of the teacher-training department" (p 33). The Georgia plan (Georgia Agricultural College, Athens) included a system of "practice teaching." Practice teachers assumed full responsibility for part of the vocational agriculture classes in their "practice school" for a short period (at least 120 hours, including 10 consecutive days for a total of 30 hours of concentrated experience.

The most recent definitive work that examined student teaching in agricultural teacher education is Berkey (1967). The clear position maintained throughout the Berkey book was that field-based pre-student teaching and student teaching experiences are an integral part of the preservice teacher preparation in agricultural education. In his chapter of that book, Marvin (1967) likened student teaching at the university level to supervised occupational experience programs (SOEP) at the high school level, as that practice was known at the time. He described student teaching as the most important part of the professional education of teachers. The version of student teaching described in that publication is clearly an apprenticeship model.

Criticism of Student Teaching as Apprenticeship

We can see that there is a long-standing and broad advocacy for and acceptance of a field-based student teaching apprenticeship as of paramount importance in agricultural teacher education. At the same time, a strong case can be made that student teaching, organized on the apprenticeship model is not the most effective or efficient means of preparing new teachers. Indeed, from a theoretical perspective, some even question the appropriateness of student teaching as apprenticeship.

Dewey (1904) emphasized the value of the student teaching experience when he argued that some form of practice teaching in real classrooms is essential in the preparation of prospective teachers. His vision was clearly not in the form of an apprenticeship, but was more clinical in nature and less an apprenticeship-style immersion in the school milieu. He envisioned teacher candidates who would integrate their academic and professional studies with concurrent guided clinical experiences in a laboratory school. They would teach a limited number of classes then return to campus to continue their academic studies and to reflect on what they had experienced. He warned against premature placement of student teachers in real schools for experience before they had learned to reflect on what they had seen and experienced. He contended that preservice teachers need extensive, controlled clinical experiences with guided reflections on practice. Only then, should they move into internships in the public schools, and then only in carefully-selected and supervised settings (Dewey, 1904).

Cruickshank & Armaline (1986) proposed that student teaching in its traditional sense is more appropriate for training teaching craftspersons, such as teaching aides, than educating professional teachers. They contended that the use of a clinical laboratory approach is more appropriate for developing professionals. They viewed student teaching

as an "apprenticeship model" where the novice learns from the master of the trade. They posited that research indicates practice teachers need frequent and varied practice that is regularly criticized with feedback and reflection, and that a controlled clinical setting rather that an uncontrolled school setting is more appropriate for preservice teacher preparation. They contended that student teaching should change from the current apprenticeship model to a more rigorous, professional one.

Berliner, (1985) was even more critical of student teaching as apprenticeship. He argued that student teaching, as now practiced is of little value or even counterproductive. He concluded that student teaching, in its present form, militates against the development of analytic skills in prospective teacher s and that it retards the process of professionalizing teaching. To replace the current student teaching model, he advocated the development of pedagogical laboratories where specific skills can be practiced, criticized, analyzed, and evaluated. The current movement toward Professional Development Schools is in part a result of such criticisms of student teaching, as we know it today. Berliner argued that student teaching promoted the status quo in teaching and militated against meaningful reform.

According to Smith and Souviney (1997) current research points out a number of shortcomings in student teaching as practiced today. "For example, secondary student teachers often teach less than a full-day schedule of classes. Students are unable to experience the beginning, end, or other important phases of the school year.... Instead of implementing their own ideas about curriculum and classroom management, student teachers must accept and function within the pre-existing classroom structure. This often causes first-year teachers to "experience difficulty juggling priorities and coordinating time.... Many student teachers have reported "going through the motions of teaching rather than connecting these activities to what pupils should be learning over time" (p 9)

Problem, Purpose, and Objectives

We do not believe, as Cruickshank and Armaline, (1986) and Berliner (1985) advocated, that student teaching, as practiced in agricultural teacher education today should be replaced by strictly clinical experience programs. Yet we must recognize, as we move closer to entering the 21st century, it is inevitable that student teacher programs will face needed revisions. In today's fast growing, constantly evolving society, it is inevitable that student teaching programs will face needed revisions and perhaps even major changes to ensure that the best possible experiences are being provided.

Zeichner (1987) concluded no general set of goals for student teaching has ever developed. There is no consensus on how student teaching should be structured or implemented. Moreover, research has established the efficacy of student teaching as an apprenticeship in teacher preparation. (Sears et al, 1994) We simply do not know if 10 weeks or 15 weeks of student teaching is enough for students to develop the necessary levels of skill and confidence to be independent professionals. We do not know what experiences are needed or in what combination. We do not know how to adequately evaluate student teaching (Dutt, Tallerico, & Kayler, 1997).

Problem. If our agricultural teacher education programs would prepare teachers for the changing needs of the profession rather than for past conditions, they must continue to evolve. Certainly the student teaching component of the program is no exception. Yet, we do not know, as a group, how student teaching is currently being practiced in agricultural education programs across the nation.

Purpose. The purpose of this study was to assess current student teaching practices in agricultural education in the United States.

Objectives. To accomplish that purpose, the following objectives were identified:

1. Determine the nature, structure, and scope of student teaching in agricultural teacher education as practiced in the United States today.
2. Determine how the agricultural education student teaching experience is supervised and evaluated in the United States today.

Research Methods

Instrumentation

Validity. The researchers used a review of the literature and a set of readily available student teaching materials to generate an initial list of questions that might be of interest in the study. We formulated the initial set of questions into a draft survey instrument. We then submitted the draft survey instrument to a validation panel consisting of teacher educators in agricultural education, vocational and technical education, and general education; experienced cooperating teachers; and recent and current student teachers in agricultural education. Using the feedback of the validation panel, we revised the instrument. We then field-tested it on a group of teacher educators both in and outside of agricultural education.

Reliability. This is a non-additive instrument consisting exclusively of independent items without shared scales; therefore, typical measures of internal consistency or other forms of correlation-based coefficients are inappropriate and computation of such coefficients would be meaningless (Heath-Camp & Camp, 1992). Mechanical reliability based on readability and clarity was established using the field test.

Data Collection

The population for the study was all agricultural teacher education programs in the United States as identified by Graham (1996). The survey instrument along with a cover letter was addressed to the head agricultural teacher educator in each institution and mailed in April 1998. A follow-up mailing in the form of a reminder was conducted approximately two weeks later. A second follow-up mailing with a second copy of the instrument was mailed approximately two weeks thereafter.

A total of 93 instruments were mailed using the Graham (1996) directory, even though, according to the latest Supply and Demand Study (Camp, 1995), only about 80 agricultural education programs remain active in the preparation of teachers and can be

expected to produce student teachers in a given year. As expected five of the thirteen institutions for which we expected no data based on the Camp study, responded indicating that they were no longer had teacher education missions and the remaining eight failed to respond. Those 13 institutions were accordingly excluded from further consideration, leaving a total of 80 institutions as the actual population for the study. Of the 80 institutions, 73 responded, for a 91 percent response rate. Given that response rate, no further follow-ups were attempted and a comparison of "Early" versus "Late" responses using the (Miller & Smith, 1983) technique was deemed unnecessary.

Data Analysis

On receipt, the data from the instruments were coded into a spreadsheet rather than a standard statistical package, since inferential statistics are inappropriate for a population survey. Simple descriptive statistics computed were computed: frequencies, means, and standard deviations.

Findings

Over half (55%) of all student teachers (N=816) in agricultural education in 1997-98 were scheduled in spring term (semester or quarter). The least popular term was winter quarter (9.7%). See Table 1.

Table 1.
Agricultural Education Student Teachers by Term *

	Institutions Reporting	Number
Fall	41	288
Winter	13	79
Spring	60	449
Total *	72	816

* One institution reported student teachers part-time for fall and winter but full time for spring. Those student teachers are NOT included here for fall and spring to avoid a duplicated count.

The majority of institutions reporting (65.2%) indicated that the student teaching experience lasts for a complete term, either semester or quarter. Almost all (93%) reported that student teaching is a continuous experience. The range of weeks for student teaching was from 7 to 20 weeks with a mean of 13.2. One of the institutions indicating non-continuous student teaching indicated that midway through student teaching is a brief extension experience which is then followed by a return to the student teaching site. Several others reported student teaching interspersed with on-campus seminars, with a subsequent return to the student teaching site. See Table 2.

Table 2.
Scope of Student Teaching in Agricultural Education

	Institutions Reporting	Mean	Standard Deviation
Internship lasts full semester/quarter	47		
Internship is continuous	67		
Weeks of internship	72	13.2	2.8
Weeks of "full-time" teaching	63	6.1	3.2
Take "other courses" during internship	38		
Minimum required hours actual teaching	32	169.4	114.1
Minimum required hours non-teaching experience	26	134.0	111.2
Minimum required hours of total experience	36	247.8	187.4
Student teachers receive stipend	3	$1,048.30	NA
Student teachers pay reduced fees during internship	8		
Cooperating teachers receive stipend	53	$154.90	$109.40
Cooperating teachers receive faculty "appointment"	11		
Semester * hours credit for internship	71	10.5	

* Stipends reported were $ 125, $250, and $2,000, respectively.

** Credits reported as quarter hours were converted to semester hours.

Almost all institutions (87.5%) reported that at some time during student teaching the intern takes on responsibility for a full-load of teaching. The mean number of weeks of full time teaching was 6.1 weeks with a standard deviation of 3.2 weeks. Less than half (44.4%) reported a minimum number of hours of classroom teaching experience required. For the 32 institutions requiring a pre-determined number of teaching hours, the mean was 169.4 hours, with a huge variability indicated by a standard deviation of 114.1 hours. Even fewer institutions (36%) require a pre-determined number of hours of non-teaching experience, but again, a mean of 134 hours and a standard deviation of 111.2 hours indicate great variability. See Table 2.

A very limited number of institutions (n=3) report that their student teachers receive monetary stipends. One institution reported a $2,000 student stipend. Slightly more institutions report lower fees being required of student teachers. The typical lower fee consists of remission of such miscellaneous charges as the athletic fee or the general activity fee. Most institutions (73.6%) report paying a cooperating teacher stipend, with stipends ranging from $50 to $500, with a mean of $154.90 and a standard deviation of $109.40. A small number of institutions formally recognize their cooperating teachers with some sort of faculty appointment such as adjunct or clinical status. Such status carries benefits ranging from "recognition" to one institution which provides up to 6 semester hours of coursework with no tuition charges for clinical faculty. See Table 2.

An examination of Table 3 indicates that undergraduate agricultural education majors, including double majors, make up a primary source of student teachers for the vast majority (88.9%) of agricultural teacher education programs. The next largest groups are

those institutions reporting graduate students in student teaching -- with degree and non-degree students about equally represented. More limited are those programs reporting agricultural education minors and undergraduate certification-only students.

Table 3.
Academic Status of Student Teachers in Agricultural Education

	Institutions Reporting
Agricultural education major or double major	64
Agricultural education minor	18
Undergraduates in other majors taking certification courses	23
Non-degree graduate students taking certification courses	35
Master's degree students in certification programs	36

Table 4 provides data regarding student-to-student and university supervisor-to-student communications during student teaching. Communication among student teachers is maintained more-or-less informally in the majority of institutions. Well over half of the institutions reported that informal communication among student teachers is maintained by means of e-mail, in many cases by use of a university-maintained listserv. In still more cases, student-to-student communication takes place during small-group meetings scheduled in conjunction with the student teaching internship. About two-thirds of the institutions reported using e-mail to maintain communications between university supervisors and student teachers. In all cases the university supervisor visits the student teaching site for personal observations.

Table 4
Communications during Student Teaching

	Institutions Reporting
Small group meetings	53
E-mail among student teachers, individually or by listserv	46
E-mail between university supervisor and student teachers	47
See-U, See-Me Internet Conferencing	6
Surface mail	48
Telephone conferencing	16
University supervisor visits	72
Other	11

Table 5 provides information on how student teaching is managed and assessed. Almost 60 percent of institutions report that a formal course syllabus is used to provide guidance for structuring the student teaching experience. A larger majority (86%) of institutions use student teacher manuals to provide guidance for the interns and slightly fewer (68.1%) reported providing cooperating teachers with a manual for their use. In terms of assessing the results of the student teaching experience, invariably the university supervisor's observations are used as a primary evaluation tool. In all but one case, institutions indicated that the cooperating teachers' assessments are also used as an

evaluation tool. Well over two-thirds of the institutions require their student teachers to develop and submit for evaluation some form of portfolio.

Table 5.
Planning and Assessment of Student Teaching

	Institutions Reporting
Course syllabus used	43
Student teaching manual provided	62
Cooperating teacher manual provided	49
Case studies conducted and evaluated	17
Portfolio developed and evaluated	50
Supervision by agricultural education faculty	71
Supervision by others than agricultural education faculty	15 *
Evaluation based on university supervisor observations	72
Evaluation based on cooperating teacher observations	71

Not reflected in any of the tables, but appropriate for discussion at this point, is a description of the criteria used in the selection of cooperating teachers. Respondents indicated almost few systematic procedures or commonalities when asked how cooperating teachers were selected. In only a few cases were any formal criteria used. Most typical were statements referring to such intangible criteria as "general reputation" or "personal experience with the teacher." In some cases, completion of a seminar on supervising student teachers is required. In several cases, a collaborative decision is made between teacher educators and state staff members.

In 59 of the 72 institutions reporting, agricultural education faculty are the only university representatives involved in supervising student teaching. In 12 institutions, agricultural education faculty members provide at least part of the supervision, along with an assortment of others. In one institution, faculty outside the agricultural education program handles all student teacher supervision. The most common non-agricultural education faculty serving as the university supervisor, experienced graduate students are the most common, being reported by six institutions. In two institutions, state department of education staff members provide some supervision. Also used in this role are master teachers (n=1), retired teachers (n=1), faculty members in vocational and technical education (n=2), and other education faculty members (n=3).

Also not reflected in any table is the response to the question of how student teachers are assigned to specific cooperating teachers. In a few programs, teacher education faculty members make the decisions without consulting the student teacher. The most common practice (n=56) is to allow student teachers to request a student teaching site, then for the faculty to make the final decision.

Conclusions, Implications, Recommendations

Program Variability

Conclusion. Teacher education institutions exhibit great variability in terms of how student teaching is organized, how long it lasts, what is required of the student teacher, how the experience is organized, and how it is assessed. A limited number of student teaching programs provide intensive, planned, outside experiences in related areas such as extension.

Implications. Such programmatic diversity may be inherently good because it means individual creativity and problem solving have been used by agricultural teacher education faculty in planning their student teaching programs. Some programs incorporate innovative and exciting concepts and procedures. It should be possible to identify from this diverse set of programs "Best Practices" that could be used by teacher educators in other institutions.

Recommendation. We recommend that a series of discussion groups of teacher education faculty with responsibility for managing student teaching be convened in conjunction with other regional or national meetings to explore these "Best Practices."

Planning Documents

Conclusion. As with programmatic diversity, there is a great range in terms of the planning documentation available for use in student teaching programs. In all agricultural teacher education programs, some sort of planning documentation is used. Many use course syllabi as a structuring document. In slightly more programs, a cooperating teacher manual is provided. The vast majority of programs provide a student teaching manual.

Implications. One would assume that student teachers generally desire and probably need fairly structured guidance in what to do and how to conduct themselves during the student teaching experience. This is probably just as true of cooperating teachers. With such a large number of cooperating teacher manuals, student teacher manuals, course syllabi, and other documents in use, it should be possible to synthesize a set of generic syllabi and manuals that would be of value to the members of the profession as we periodically revise our own such documents.

Recommendations. We recommend that student teaching syllabi, general documentation, student teacher manuals, and cooperating teacher manuals be collected from agricultural teacher education programs across the country. The documents should be analyzed qualitatively for commonalities and for innovative ideas. From those, a model set of student teaching planning documentation should be prepared and disseminated to the profession for use as a departure point in our ongoing individual program development.

Cooperating Centers

Conclusion. Cooperating teachers are selected based on a wide variety of criteria, most of which appear to be rather arbitrary on the part of the teacher education faculty. Little formal training is provided on the role of the cooperating teacher or on how to supervise student teachers.

Implications. Just as the ability to teach is probably not a genetically pre-determined human capacity, neither is the ability to serve as a cooperating teacher. It seems logical to believe that cooperating teachers should be selected based on some pre-determined set of criteria and that they should receive training in how to serve as cooperating teachers.

Recommendation. We recommend that a study be conducted with successful cooperating teachers to determine the characteristics skills needed in that role. Based on that research, a model set of criteria for cooperating teachers and a set of competencies needed by cooperating teachers should be developed.

Discussion

Clearly, student teaching in agricultural education is based more on the apprenticeship model, as described Smith and Souviney (1997) and Berkey (1967) than the clinical approach as advocated by educational theorists such as Dewey (1904), Cruickshank and Armaline (1986), and Berliner (1985). Although some aspects of a clinical approach to student teaching are used, such as planned exercises in reflection and periodic seminars designed to encourage self-examination, in general the basic model used clearly remains that of apprenticeship.

Student teaching is generally considered to be the capstone experience in agricultural teacher education. Yet we know very little about how student teaching is organized, managed, supervised, and evaluated in the profession. If student teaching is indeed as critical and integral to the process of teacher preservice development as we believe it to be, then it deserves more attention in our research and development activities in the field of Agricultural Education and in our national professional development effort.

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